SunStar

USER'S MANUAL

KM-360J SERIES

**High Speed 1-Needle,
Needle Feed Bottom
Hemming Sewing
Machine
(Mechanical Part)**

1) FOR AT MOST USE WITH EASINESS, PLEASE CERTAINLY READ THIS MANUAL BEFORE STARTING USE.
2) KEEP THIS MANUAL IN SAFE PLACE FOR REFERENCE WHEN THE MACHINE BREAKS DOWN.

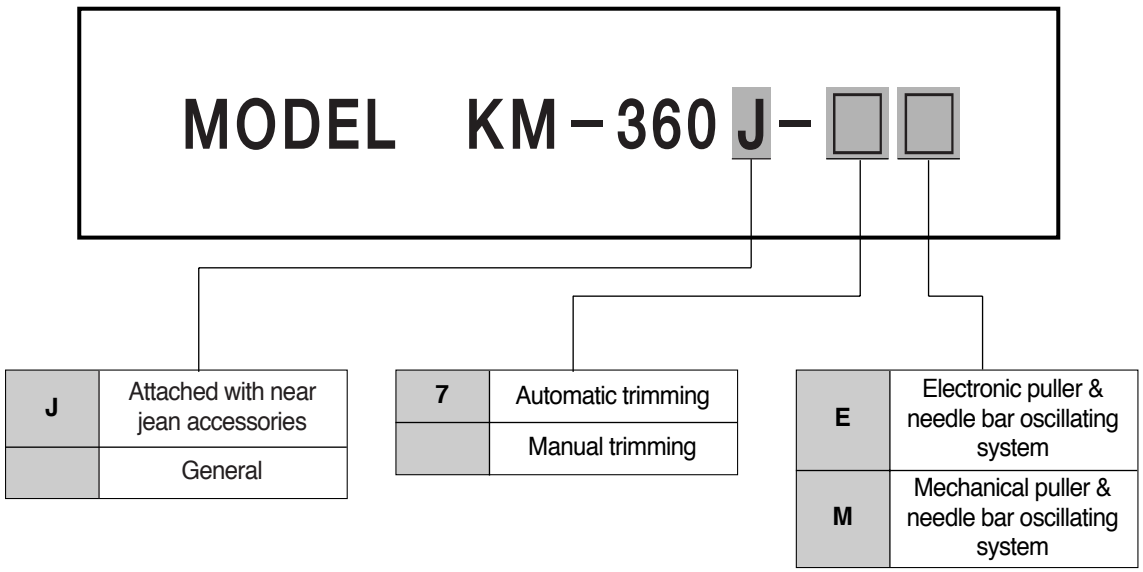
SunStar CO., LTD.

MME-090929

1. Thank you for purchasing our product. Based on the rich expertise and experience accumulated in industrial sewing machine production, SUNSTAR will manufacture industrial sewing machines, which deliver more diverse functions, high performance, powerful operation, enhanced durability, and more sophisticated design to meet a number of user's needs.
2. Please read this user's manual thoroughly before using the machine. Make sure to properly use the machine to enjoy its full performance.
3. The specifications of the machine are subject to change, aimed to enhance product performance, without prior notice.
4. This product is designed, manufactured, and sold as an industrial sewing machine. It should not be used for other than industrial purpose.

SunStar CO., LTD.

Machine Type



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1

Machine safety regulations

Safety instructions on this manual are defined as Danger, Warning and Caution.
If you do not follow the instructoins, physical injuries and machine damages might be occurred.

Danger : This indication should be observed definitely. If not, there will be a danger during the installation, conveyance and maintenance of the machine.

Warning : When you follow this indication, injuries from the machine can be prevented.

Caution : When you follow this indication, error on the machine can be prevented.

1.1) Transporting machine Danger	Those in charge of transporting the machine should have a full understanding of the machine. The following indications should be followed when the machine is being transported. ⓐ More than 2 people must transport the machine. ⓑ To prevent accidents from occurring during transportation, wipe off the oil on the machine compeletely.
1.2) Installing machine Warning	The machine may not work properly or breakdown, if installed in certain places, Install the machine where the following qualifications agree. ⓐ Remove the package and wrappings from the top. Take special notice on the nails on the wooden boxes. ⓑ Dust and moisture stains and rusts the machine. Install an airconditioner and clean the machine regularly. ⓒ Keep the machine out of the sun. ⓓ Leave sufficient space of more than 50cm behind, and on the right and left side of the machine for repairing. ⓔ EXPLOSION HAZARDS Do not operate in explosive atmospheres. To avoid explosion, do not operate this machine in an explosive atomsphere including a place where large quantities of aerosol spray product are being used or where oxygen is being administered unless it has been specifically certified for such operation. ⓕ The machine is not provided with a local lighting due to the feature of machine. Therefore the illumination of the working area must be fulfilled by end user. [Refer] Details for machine installation are described in 4. Machine Installation.
1.3) Repairing machine Caution	When the machine needs to be repaired, only the assigned troubleshooting engineer educated at the company should take charge. ⓐ Before cleaning or repairing the machine, turn off the main power and wait 4 minutes till the machine is completely out of power. ⓑ Not any of the machine specifications or parts should be changed without consulting the company. Such changes may make the operation dangerous. ⓒ Spare parts produced by the company should only be used for replacements. ⓓ Put all the safety covers back on the machine after the machine has been repaired.

1.4) Operating machine

Warning

KM-360J series were designed as industrial sewing machines to conduct bottom hemming on fabric and similar materials. Observe the following instructions during machine operation.

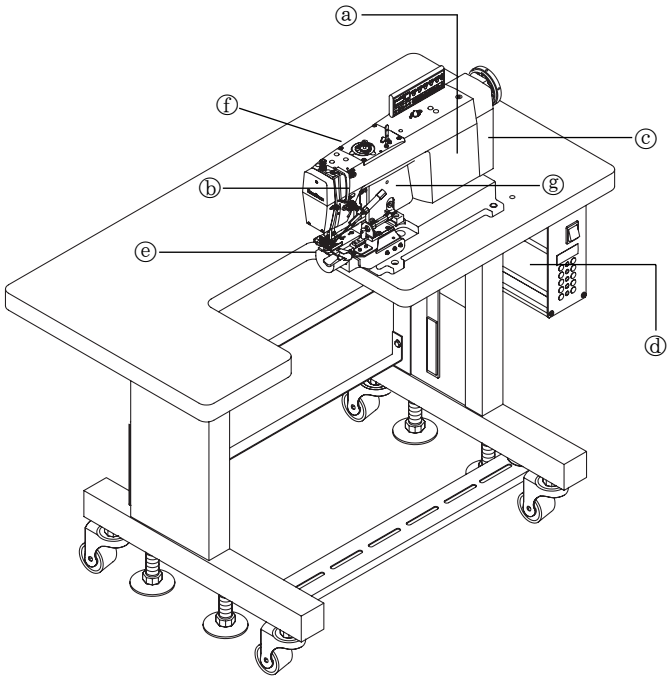
ⓐ Read through this manual carefully and completely before operating the machine.
ⓑ Wear proper clothes for work.
ⓒ Keep hands or other parts of the body away from the machine's operation parts(needle, shuttle, thread take-up lever, pulley, etc.) when the machine is operating.
ⓓ Keep the covers and finger guard on the machine during operation.
ⓔ Be sure to connect the earthing conductor.
ⓕ Turn off the main power and check if the switch is turned "off" before opening electric boxes such as the control box.
ⓖ Stop the machine before threading the needle or checking after work.
ⓗ Do not step on the pedal when turning the power on.
ⓘ If possible, install the machine away from source of strong electrical noise such as high frequency welding machines

[Warning]
Keep motor cover in place before operating, turn off power before inspecting or adjusting.

1.5) Safety devices

Caution

ⓐ Safety label : It describes cautions during the machine operation.
ⓑ Thread take-up cover : It prevents any contact between body and take-up lever.
ⓒ Motor cover : A device to prevent hands, feet and clothing from getting jammed by the motor.
ⓓ Label for specification of power : It describes cautions for safety to protect electric shock during the motors' rotation. (Voltage input / use Hz)
ⓔ Finger guard : It prevent contacts between finger and needle.
ⓕ, ⓖ Gear covers (left), (right) : They prevent fingers from contacting the conversion gear.



1.6) Caution mark position

Caution mark is attached on the machine for safety.
When you operate the machine, follow the directions on the mark.

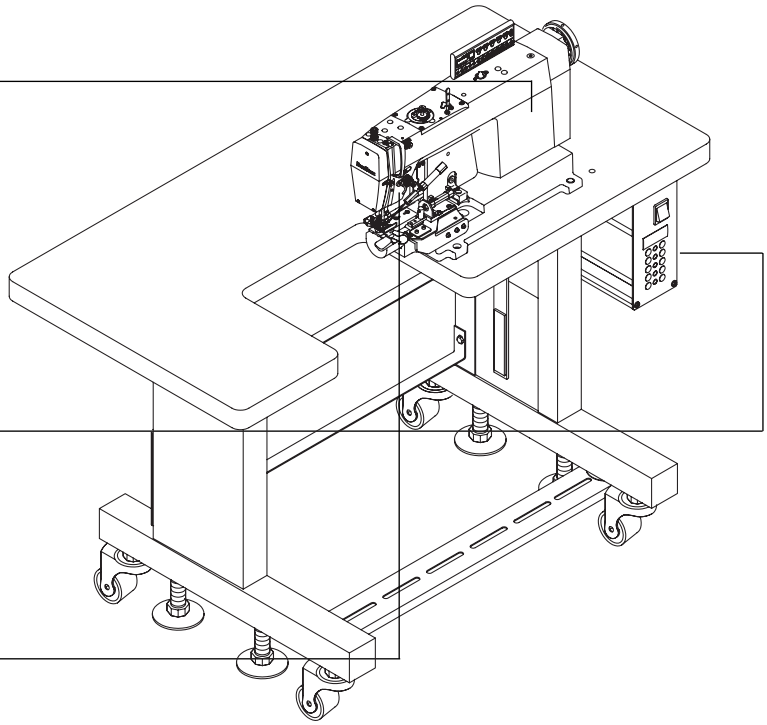
CAUTION
주 의

Do not operate without finger guard and safety devices. Before threading, changing bobbin and needle, cleaning etc. switch off main switch.
손가락 보호대와 안전장치 없이 작동하지 마십시오.
실, 보빈, 바늘교환시나 청소전에는 반드시 주전원의 스위치를 꺼 주십시오.

WARNING
경 고

Hazardous voltage will cause injury.
Be sure to wait at least 360 seconds before opening this cover after turn off main switch and unplug a power cord.
고압 전류에 의해 감전될 수 있으므로 커버를 열 때는 전원을 내리고 전원 플러그를 뽑고 나서 360초간 기다린 후 여십시오.

CAUTION
경 고



1-7) Contents of marks

Warning

Caution

1)

CAUTION
주 의

Do not operate without finger guard and safety devices. Before threading, changing bobbin and needle, cleaning etc. switch off main switch.
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2)

WARNING
경 고

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Be sure to wait at least 360 seconds before opening this cover after turn off main switch and unplug a power cord.
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3)

2

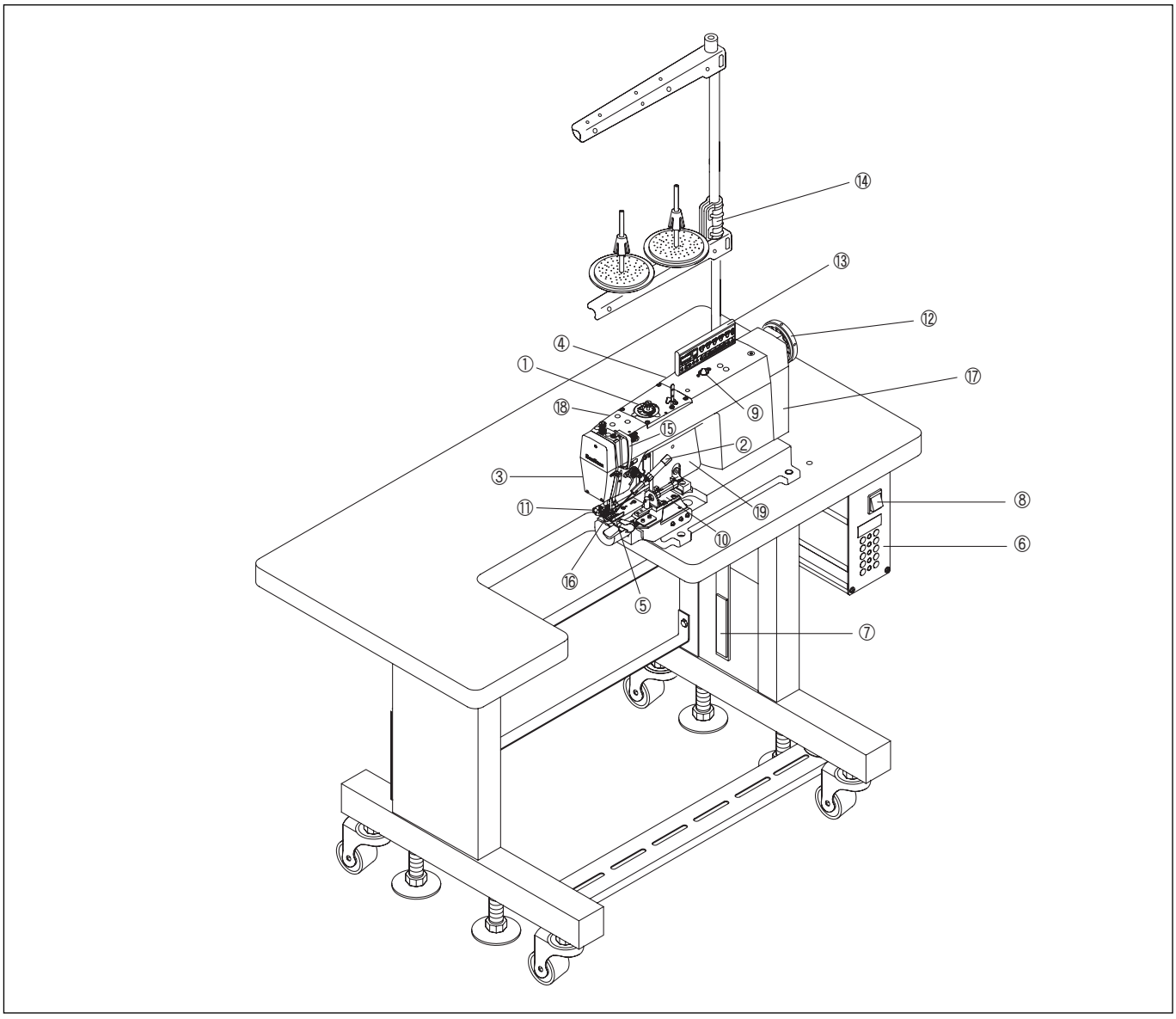
Machine Specifications

Model Name		KM-360J-7E	KM-360J-7M	KM-360J-M
Use		Jeans bottom hemming (for heavy materials)		
Lubrication		Automatic lubrication		
Sewing Speed		Up to 4,000 spm		
Stitch Length		2~5mm	2~4.2mm	
Needle Bar Stroke		34.6mm		
Thread Take-up Lever Stroke		70.8mm		
Needle		DP × 5 SERV 7 110		
Hook		Rotary large hook (2x)		
Pants Hem Size		8~35mm		
Presser Foot Lift	Auto (Pneumatic)	14mm	14mm	14mm (foot pedal)
	Manual	4mm	4mm	4mm
Automatic Trimmer		○	○	×
Wiper Device		○	○	×
Puller Driving System		Driven by the stepping pulse motor	Mechanical	Mechanical
Needle Bar Oscillating System		Driven by the stepping pulse motor	Mechanical	Mechanical
Pneumatic Pressure		0.5MPa		
Main Shaft Motor		500W direct drive AC servo motor	500W direct drive AC servo motor	Clutch motor

3

Machine Parts

3.1) Parts Name



① Thread winder
② Pneumatic wiper
③ Presser bar lifter
④ Pneumatic auto presser bar lifter
⑤ Presser foot
⑥ Control box
⑦ Lap switch
⑧ Power switch
⑨ Oil window
⑩ Hammer
⑪ Pneumatic auto presser foot lifter
⑫ Sewing machine pulley
⑬ Program unit
⑭ Thread stand

Safety Gears

⑮ Thread Take-up Cover
⑯ Finger Guard
⑰ Motor Cover
⑱ Gear Cover (left)
⑲ Gear Cover (right)

4

Machine Installation

4.1) Installation Environment

A. Do not use the machine if the voltage is below or above 10% of the rated voltage to prevent error-driven accidents.
B. Check the required air pressure for the devices using air pressure such as air cylinder to prevent error-driven accidents.
C. Use the machine in the following environment to ensure safe operation.
   → Operating temperature : 5° ~ 40° C
   → Storage temperature : - 10° ~ 60° C
D. Humidity : 20~80% (relative humidity)

4.2) Electricity Environment

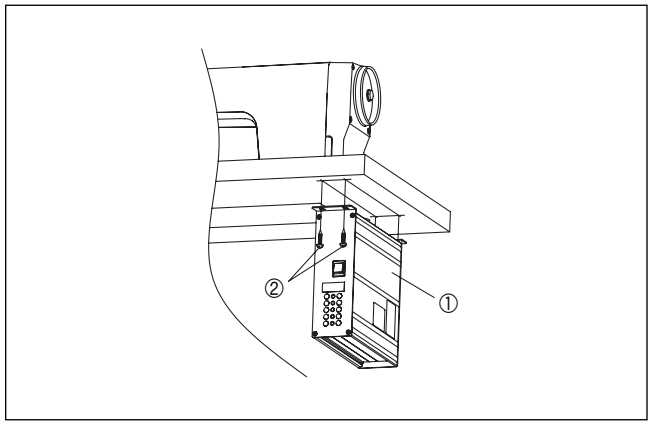
A. Power Voltage
   The power voltage fluctuation should be maintained within 10% of the rated voltage.
   The power frequency is recommended to remain within 1% of the rated frequency (50/60Hz).
B. Electromagnetic Wave Noise
   Use a different power supply from a strong magnetic field and high-frequency product, and keep the sewing machine away from them.
C. Use a safe low voltage when auxiliary devices and accessories are attached to the control box.
D. Take caution not to spill water or coffee into the control box or the motor.
E. Do not drop the control box and the motor.

- Sewing machine must be installed by properly trained engineers.
- Contact the sales agency or electricity engineer for wiring-related inquiry.
- Considering that machine weighs 40Kg or above, two people are needed for machine installation.

- Until the installation is complete, do not connect the power plug. If the foot step is mistakenly stepped, it may operate the machine, causing injury to user.
- Connect the earth wire. If the earth wire connection is incomplete, it may cause electric shock or wrong operation.
- Place motor covers on the head of the sewing machine and the motor.

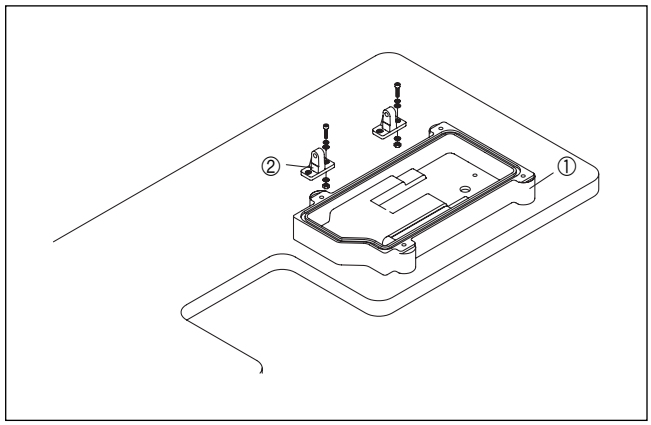
4.3) Machine Placement on the Table

A. Fix the control box ① to the table.



[Fig. 1]

B. Put the oil fan ① on the marked place and fix the bed hinge bracket② to the holes.



[Fig. 2]

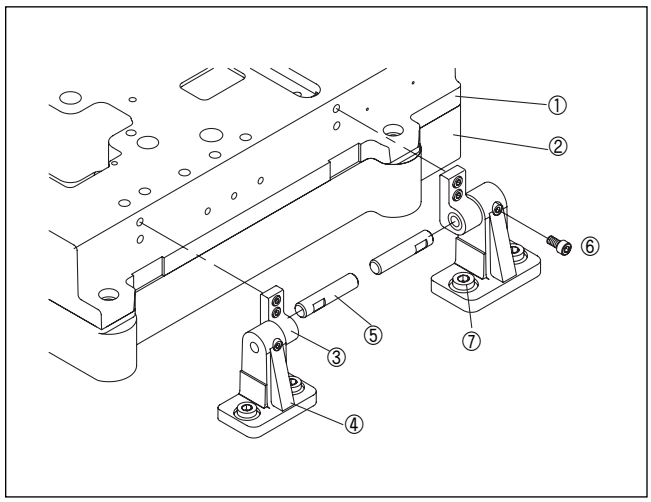
> **Caution** Loosely fasten the bed hinge bracket fixing bolts and tightly fasten them after the bed hinge shaft is assembled.

C. Place the sewing machine bed① on the top of the oil fan ② and make adjustment to align them. Then fix them with a fixing bolt.

D. Assemble the bed hinge support③ and the bed hinge bracket④ using the bed hinge shaft⑤, and fix them with the bed hinge shaft tightening screw⑥.

E. Use the fixing bolt to fix the bed hinge support③ to the bed. (Adjust the height using the bed hinge support assembly part.)

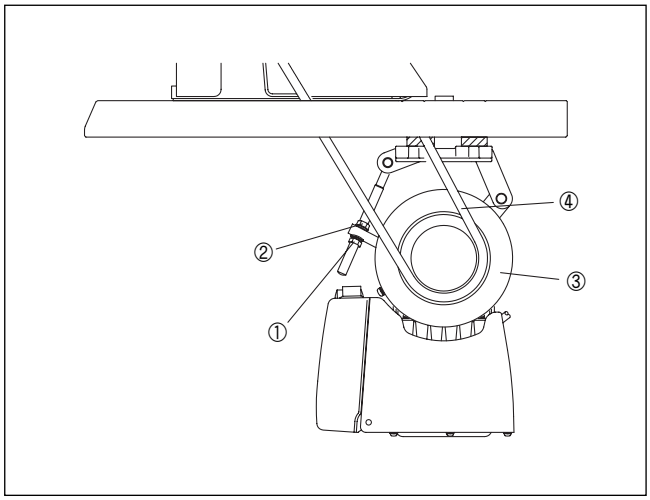
F. Completely fasten the fixing bolt for the bed hinge bracket⑦ and tightly fasten the bed hinge bracket④ to the table.



[Fig. 3]

> **Danger** To prevent safety accidents, the sewing machine must be delivered by at least two people.

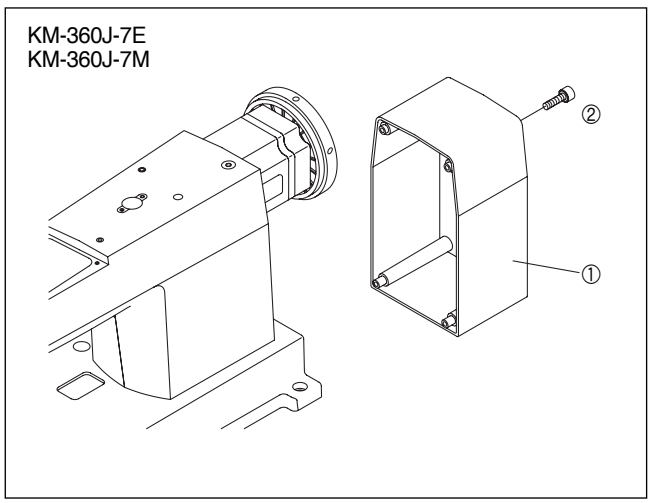
E. Install the motor and fully loosen the fixing nuts ①, ②. Then, tension is generated around the belt ④ due to the weight of the motor ③. Fasten the fixing nut ① first and tightly fasten the fixing nut ② (KM-360-M).



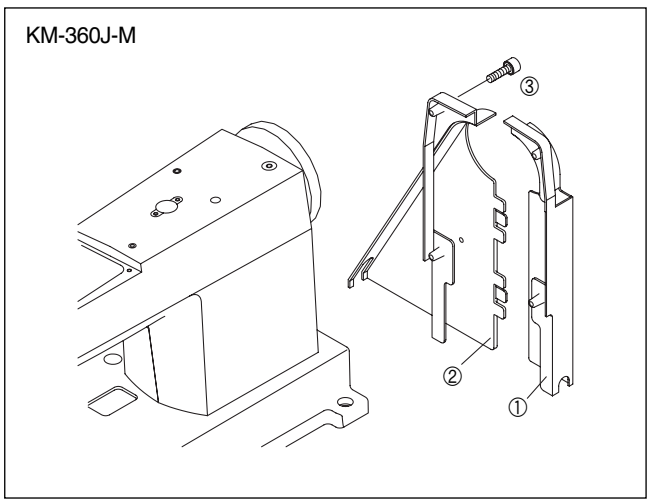
[Fig. 4]

4.4) Part Assembly

A. Attach the motor cover ① to the rear side of the machine using the fixing screw ② (However, in case of manual trimming type, attach the belt cover (A)①, (B)② to the rear side of the machine using the fixing screw③).

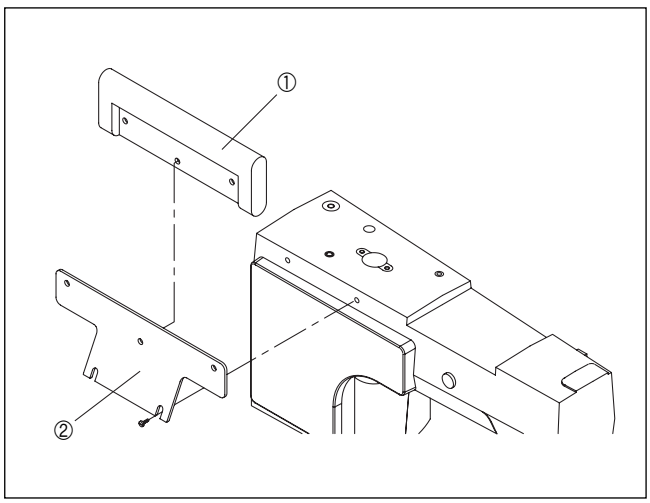


[Fig. 5]



[Fig. 6]

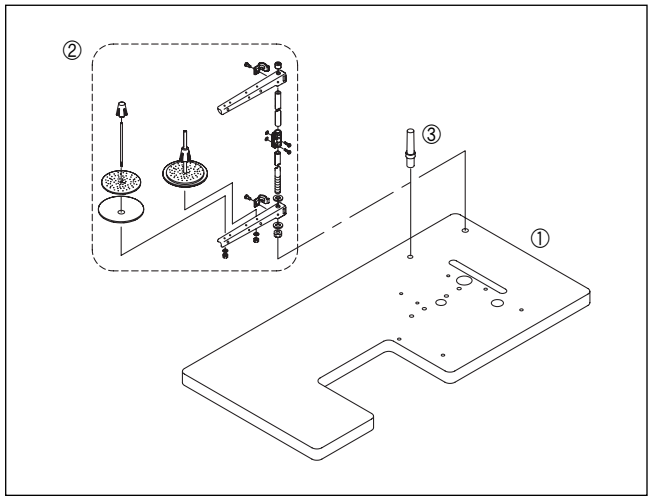
B. Assemble the operating panel ① to the bracket ②, and attach them to the rear side of the machine (KM-360J-7M).



[Fig. 7]

C. Install the thread stand ② on the table ①.

D. Hammer the head supporting stick ③ into the table.

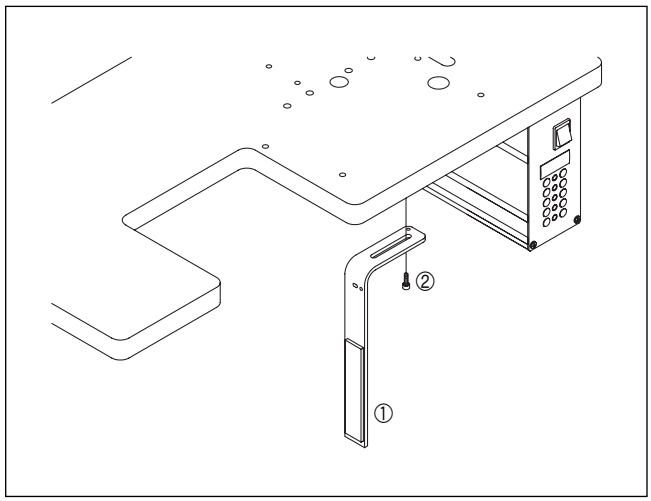


[Fig. 8]

Caution

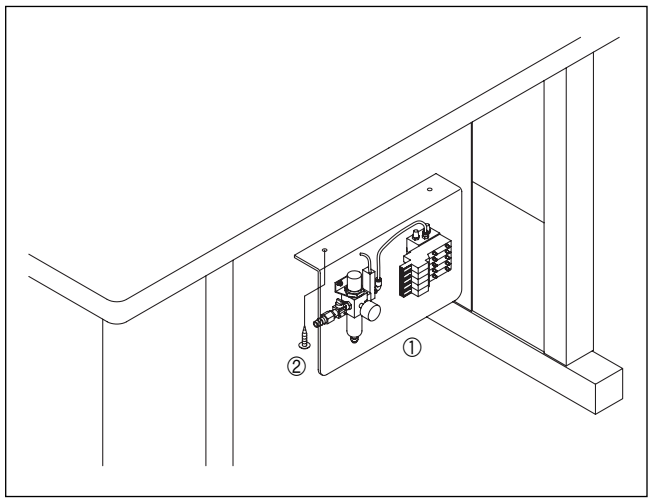
- Make sure the head supporting stick completely inserted into the table.
- Otherwise, when the sewing machine head is pushed backward, it is not stable and dangerous.

E. Install the lap switch ① beneath the table, and fix it with a nail ② (KM-360J-7E(M)).



[Fig. 9]

F. Fix the manifolder bracket ① beneath the table and fix it using a screw ② (KM-360J-7E(M)).



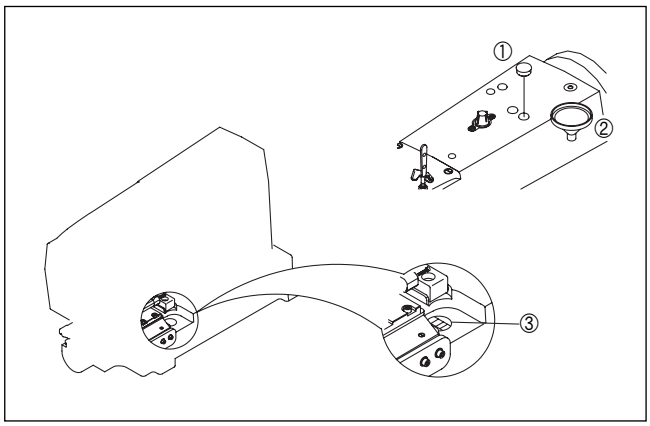
[Fig. 10]

5

Preparation Before Use

5.1) Oil Supply

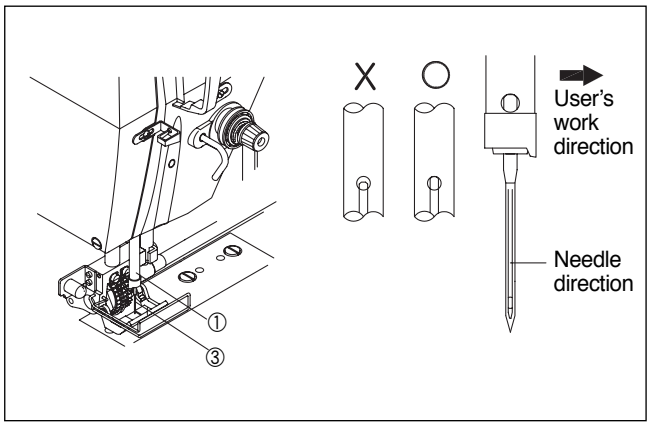
A. Remove the rubber cap ① on the arm face and supply oil through a funnel ②.
B. Oil should be supplied until the scale is located between the upper and lower limit of the oil gauge ③.



[Fig. 11]

5.2) Needle Installation

A. Turn the sewing pulley and place the needle bar ① at the highest position.
B. Loosen the fixing screw.
C. Make the long groove of the needle ② headed toward the left, and fully insert the needle into the hole as in the figure. And fix the needle with a fixing screw.



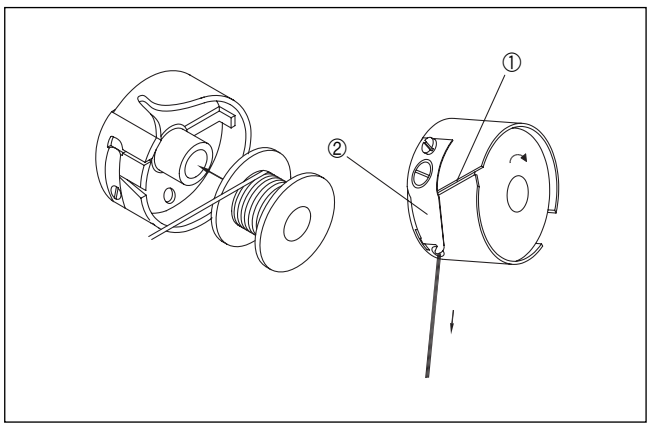
[Fig. 12]

Caution

The power switch must be turned off for needle installation.
If the pedal is accidentally pressed, it may operate the sewing machine, causing injury to user.

5.3) Lower Thread Placement

A. Insert the bobbin into the bobbin case as in the figure.
B. Pass the lower thread through the slot ① of the bobbin case and the lower part of the tension spring ②.



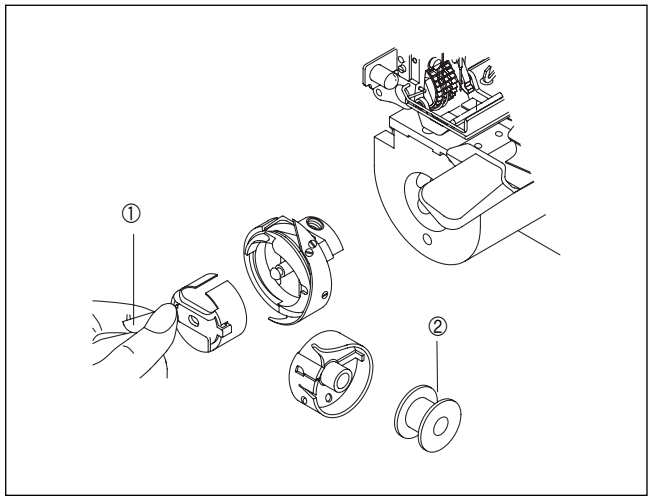
[Fig. 13]

Caution

Looking from the back of the bobbin case, the bobbin inserted should be spun counter-clockwise.

5.4) Bobbin Case Insertion and Removal

Open the hook cover and push the bobbin into the hook with the bobbin case handle held until the click sound is heard.



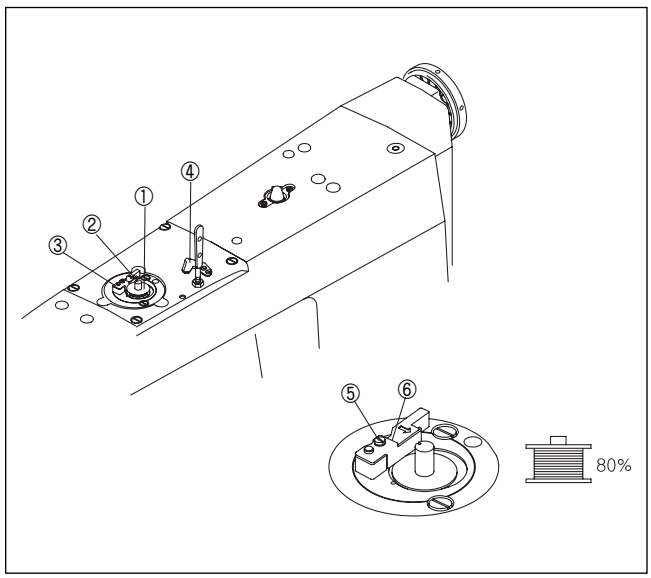
[Fig. 14]

> **Caution**
>
> If the bobbin case is not properly placed, thread entanglement or bobbin ejection might result during machine operation.

5.5) Lower Thread Winding

A. Turn on the power switch.
B. Insert the bobbin ① into the thread winder shaft ②.
C. Wind the thread around the bobbin ① several times in the arrow direction.
D. Push the thread winder lever ③ into the bobbin direction.
E. Lift the presser bar with the presser bar lifter.
F. When the pedal is stepped, the sewing machine starts operating, and the thread is wound around the bobbin.
G. When thread winding is complete, the thread winder lever ③ is automatically returned.
H. Separate the bobbin and cut the thread with the thread winder blade ④.

※ Loosen the adjusting screw ⑤ and adjust the thread winder adjusting plate ⑥ to adjust the thread volume on the bobbin.



[Fig. 15]

> **Caution**
>
> Bobbin thread volume should be up to 80% of the maximum volume.

5.6) Upper Thread Tension Adjustment

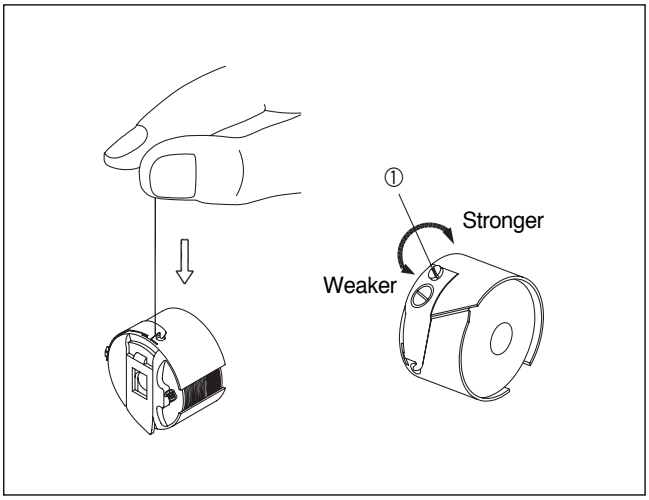
Caution

Turn off the power switch when inserting or removing the bobbin case. If the pedal is mistakenly stepped, it may operate the sewing machine, causing injury to user.

Sewing Type	Cause	Corrective Action
	Evenly created good stitch	
	If the upper thread tension is too weak or the lower thread tension is too strong	Strengthen the upper thread tension or weaken the lower thread tension.
	If the upper thread tension is too strong or the lower thread tension is too weak	Weaken the upper thread tension or strengthen the lower thread tension.

5.6.1) Lower Thread Tension

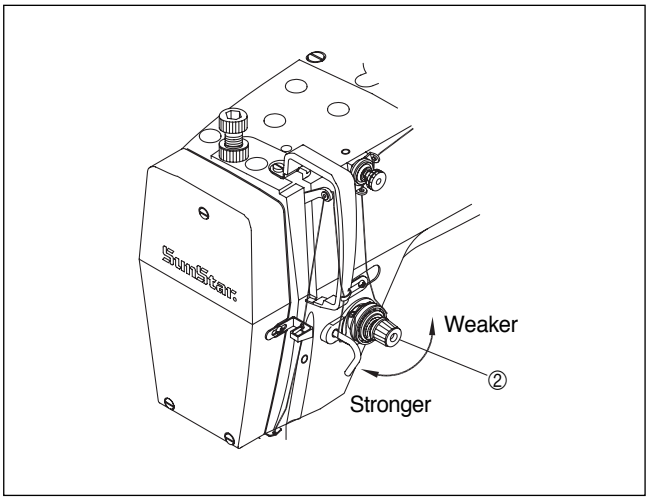
Adjust the lower thread tension by adjusting the tension adjusting screw ① to the extent that the bobbin case slowly drops due to its own weight when the thread tip is held as in the figure.



[Fig. 16]

5.6.2) Upper Thread Tension

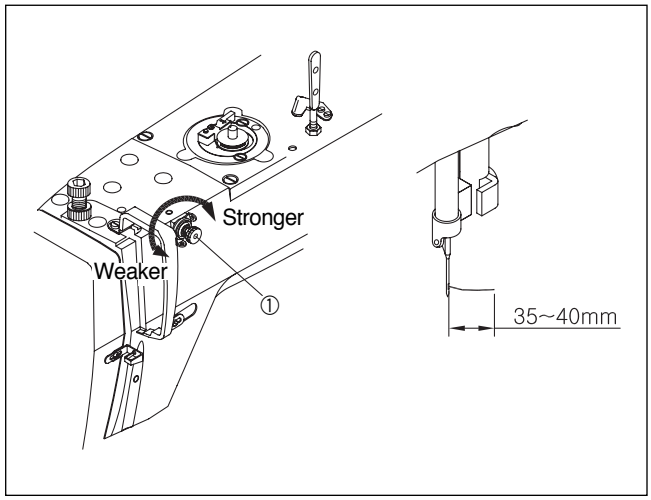
A. Adjust the lower thread tension and then the upper thread tension to produce evenly created good stitches.
B. Pull down the presser bar.
C. Turn the tension adjusting nut ② of the main thread adjusting device for adjustment.



[Fig. 17]

5.7) Remaining Thread Adjustment After Trimming

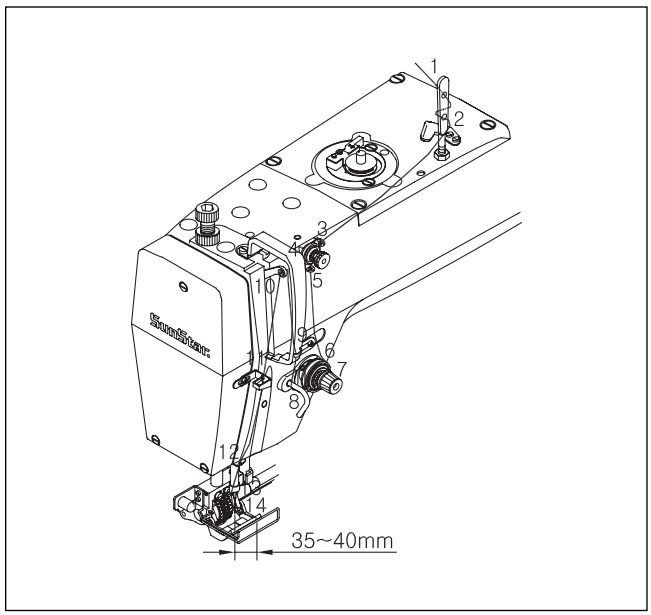
A. During trimming, the tension of the main thread adjuster is not involved, while the tension of the auxiliary thread adjusting device ① plays a role.
B. The standard remaining thread length after trimming is 35~40mm.
C. If the tension of the auxiliary thread adjuster ① is adjusted stronger, the remaining thread after trimming gets shorter. If the tension is adjusted weaker, the remaining thread gets longer.



[Fig. 18]

5.8) Upper Thread Placement

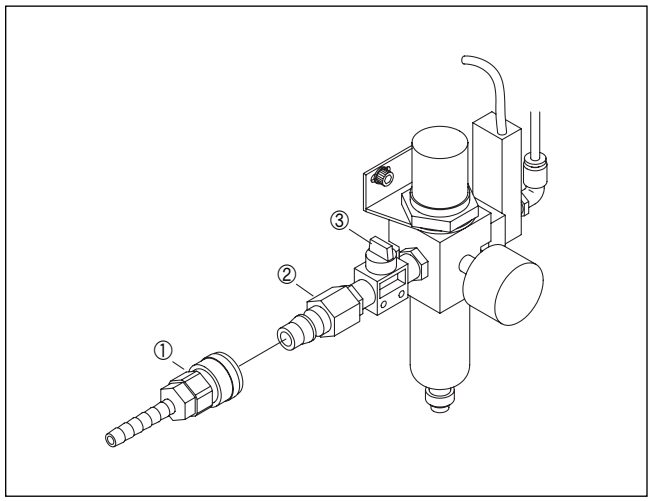
A. Turn the pulley of the sewing machine to locate the thread take-up lever ① at the highest position and pass the thread through the thread take-up lever. This makes threading easier and prevents thread escape when sewing starts.
B. Make the remaining thread as long as 35~40mm from the needle eye.



[Fig. 19]

5.9) Pressured Air Input and Air Pressure Adjustment (KM-360J-7E(M))

A. Connect the quick joint plug ② attached to the table to the quick joint socket ① through which pressured air flows in.
B. Open the finger valve ③ to make the pressured air flow into the machine.

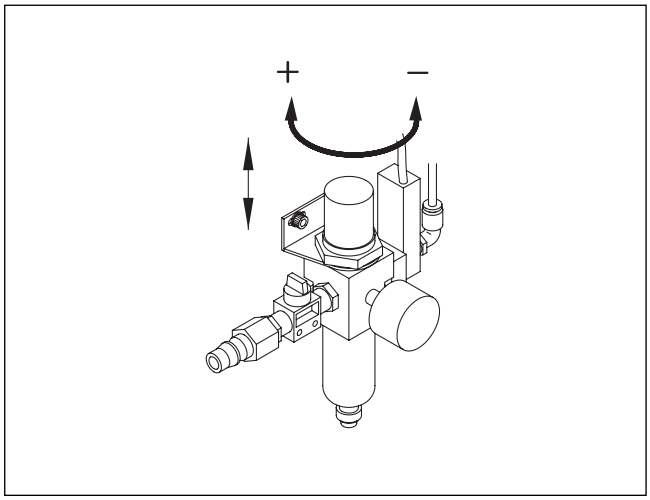


[Fig. 20]

Caution

When the finger valve is closed after operation, the remaining air is automatically released, and the remaining pressure is marked at 0MPa (0Kgf/cm^2).

C. Pull up the adjusting handle at the upper part of the filter regulator and turn it clockwise as in the figure. This increases pressure. If it is turned counter-clockwise, pressure decreases. Adjust the pressure to the appropriate level of 0.49~0.54MPa (5~5.5Kgf/cm^2) as marked on the pressure gauge and then return and settle the adjusting handle.



[Fig. 21]

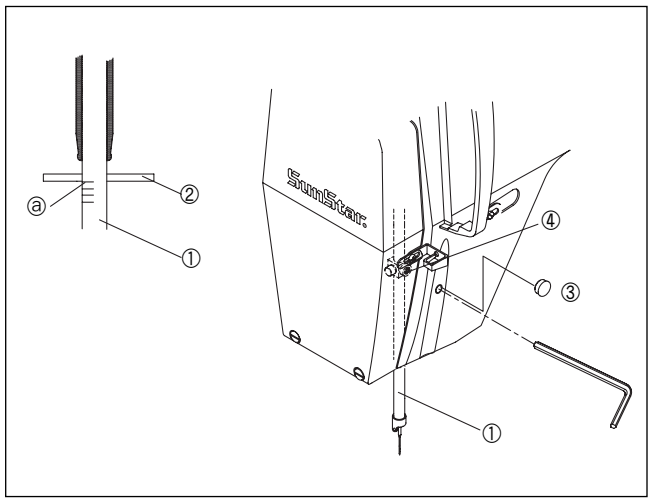
6

Maintenance

6.1) Needle Bar Height Adjustment

When the needle bar ① is at the lowest position, set the carved line ⓐ of the needle bar ① to meet the bottom of the oil rejecter cover ②.

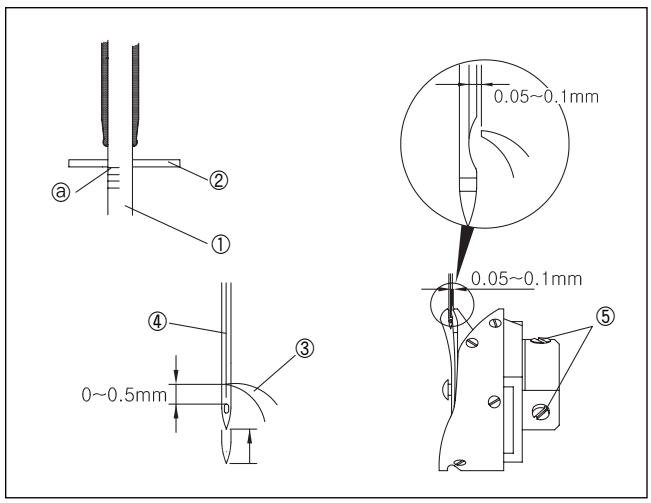
A. Turn the pulley and place the needle bar ① at the lowest position.
B. Remove the rubber cap ③.
C. Slightly loosen the screw ④ and adjust the position of the needle bar ①.
D. Completely fasten the screw ④.
E. Place back the rubber cap ③.



[Fig. 22]

6.2) Needle, Hook Timing Adjustment

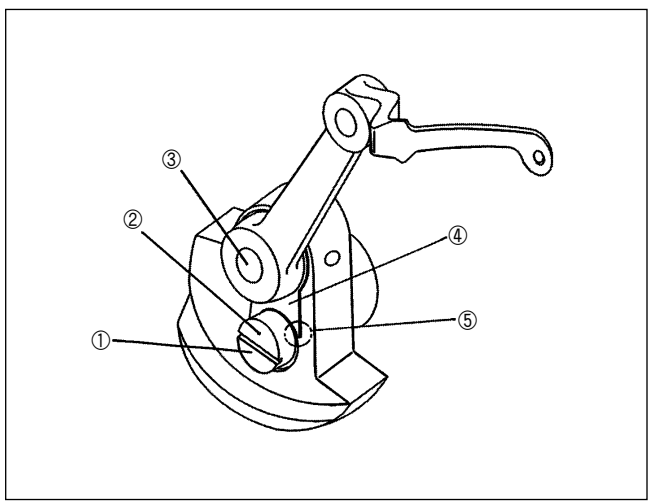
A. Turn the pulley and lift the needle bar from the lowest position. As in the figure, set the carved line ⓐ in line with the bottom of the oil rejecter cover ②. Make sure to set the distance between the needle eye and the tip of the hook at 0~0.5mm.
B. Loosen the three screws ⑤ and set the tip of the hook ③ in line with the center of the needle ④. Adjust the distance between the tip of the hook ③ and the needle ④ at 0.05~0.1mm.
C. Tightly fasten the three screws ⑤.



[Fig. 23]

6.3) Adjustment of Thread Take-up Lever Lubrication

As in the figure, when the mark ② on the lubrication adjusting pin ① head is in line with the center of the thread take-up lever crank shaft hole ③, lubrication volume is maximum. When the pin is turned left or right and the mark is adjusted toward the edge ⑤ of the link cam washer ④, lubrication volume gets smaller.
If the edge of the link cam washer is passed, no lubricant is supplied.

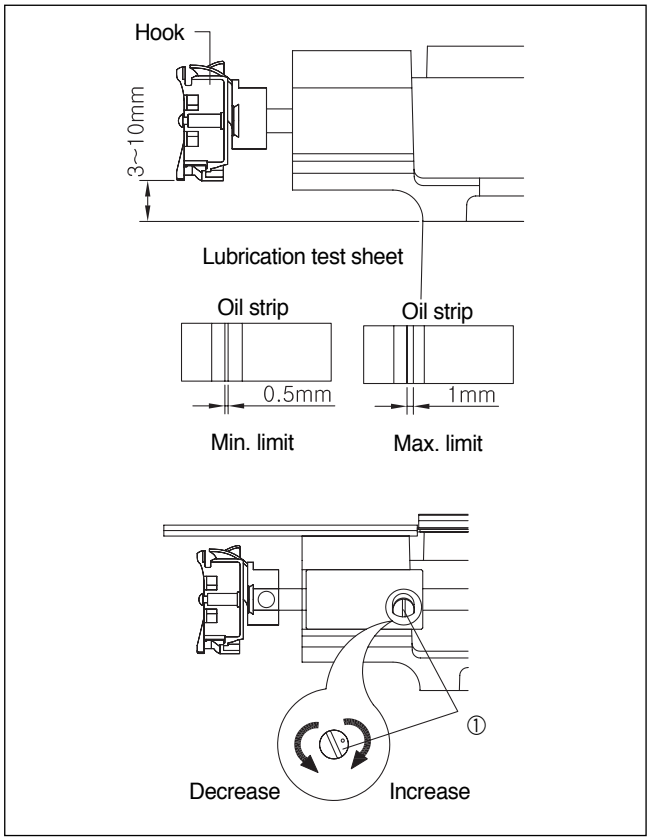


[Fig. 24]

6.4) Hook Lubrication Adjustment

A. Lubrication Volume Check
   a. Conduct idle operation for some 3 minutes (at an appropriate speed). Place the lubrication test sheet as in the figure and operate the machine for 5 seconds to check lubrication. Check oil volume sprayed to the sheet.
   b. Conduct the lubrication testing three times. If the oil strip remains within the maximum and minimum range, the lubrication is deemed proper (If lubrication is too small, hook operation might not be smooth, If lubrication is too much, the oil may stain the fabric.)

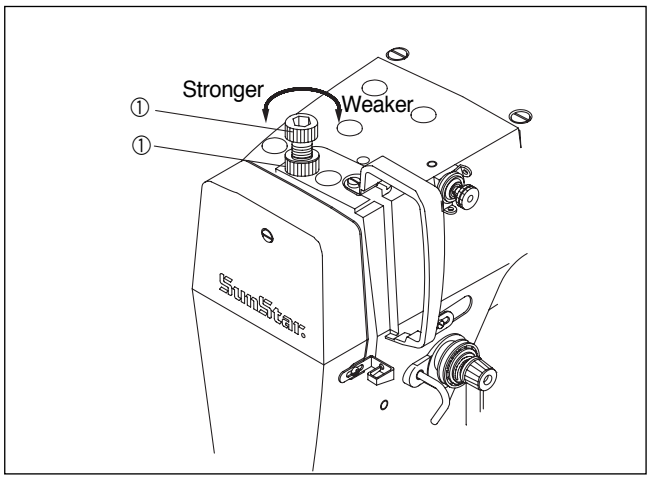
B. Lubrication Volume Adjustment
   Turn the lubrication volume adjusting screw ① on the lower shaft front bushing clockwise (+ direction), and then lubrication volume increases. If it is turned counter-clockwise (- direction), lubrication volume decreases.



[Fig. 25]

6.5) Puller (upper) Pressure Adjustment

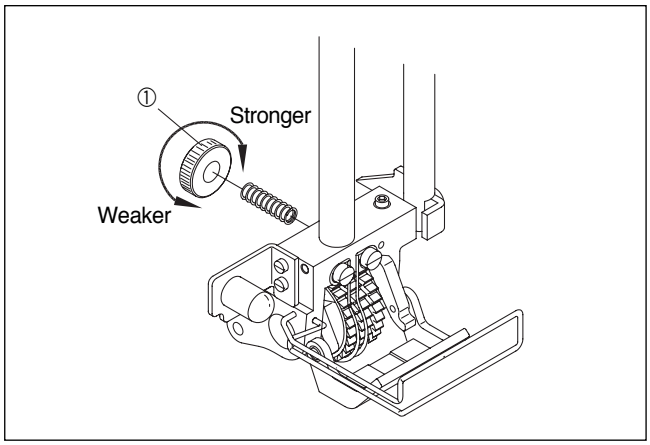
If the pressure adjusting screw ① is turned clockwise, pressure gets stronger, and vice versa.
After adjustment is complete, the fixing nut ② must be fastened.



[Fig. 26]

6.6) Presser Foot Pressure Adjustment

Turn the pressure adjusting nut ① clockwise to increase the pressure, and turn it counter-clockwise to decrease the pressure.

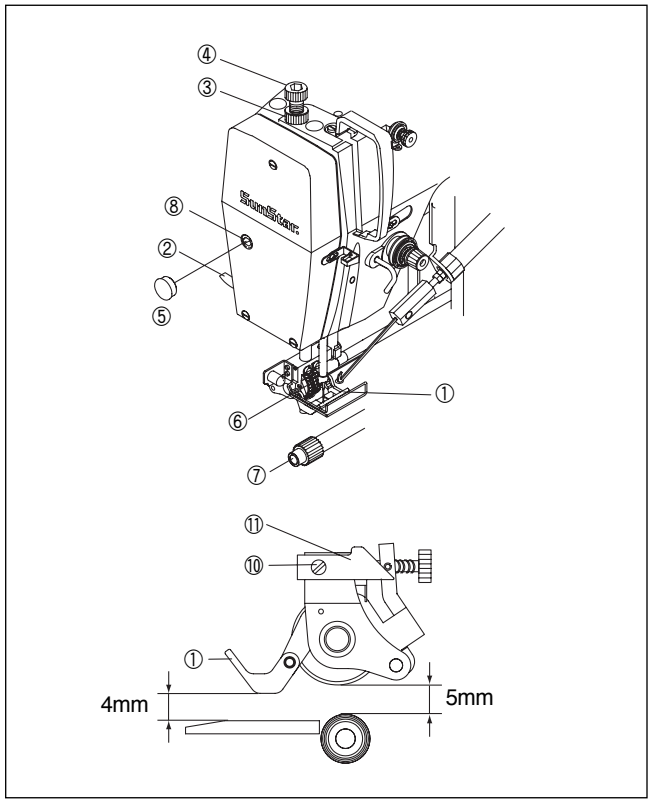


[Fig. 27]

6.7) Presser Foot Height Adjustment

When the presser bar lifter ② is lifted, the presser foot ① is normally lifted 4mm. At this time, the distance between the rollers (up) ⑥ and (down) ⑦ is 5mm.

A. Loosen the nut ③ and unfasten the pressure adjusting screw ④.
B. Lift the roller (up) ⑥ with the presser bar lifter ②.
C. Remove the rubber cap ⑤ from the face plate.
D. Slightly loosen the tightening screw ⑧ and adjust the position of the presser bar ⑨ to set the distance between the roller (up) ⑥ and the roller (down) ⑦ at 5mm.
E. Fasten the tightening screw ⑧.
F. Put back the rubber cap ⑤.
G. Adjust the puller (up) pressure with the pressure adjusting screw ④ and fasten the nut ③.
H. Loosen the tightening screw and move the presser bar lifter arm to adjust the presser bar height at 4mm.

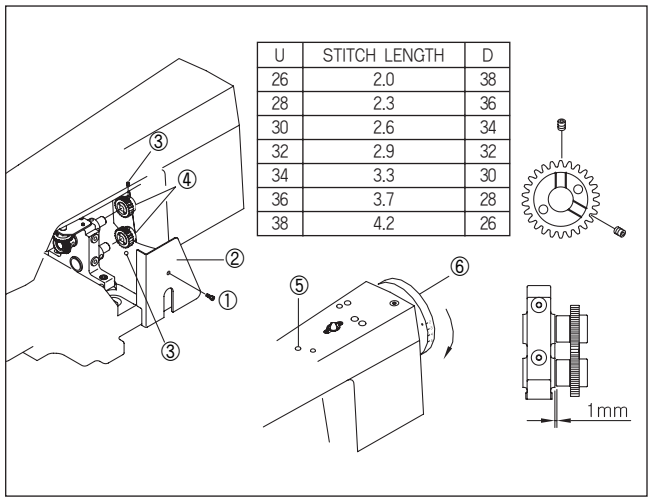


[Fig. 28]

6.8) Stitch Length Adjustment

The default stitch length is 2.9mm.

A. Loosen the tightening screw ① and remove the puller gear cover (right) ②.
B. Set the desired stitch length using the stitch length table and make a new conversion gear ready.
C. Loosen the tightening screw ③ and remove the present conversion gear ④.
D. Replace it with a new conversion gear and fasten the tightening screw ③.
E. After the conversion gear replacement, adjust the needle feed volume.
F. Press the feed adjustment button ⑤ on the arm face.
G. Turn the pulley ⑥ until the feed adjusting button ⑤ is inserted into the groove of the stitch length conversion cam and a click sound is heard.
H. Turn the pulley to make the stitch length marked on the pulley in line with the punched mark.
I. Release the feed adjusting button ⑤ and check if the pulley ⑥ is smoothly operating.



U	STITCH LENGTH	D
26	2.0	38
28	2.3	36
30	2.6	34
32	2.9	32
34	3.3	30
36	3.7	28
38	4.2	26

[Fig. 29]

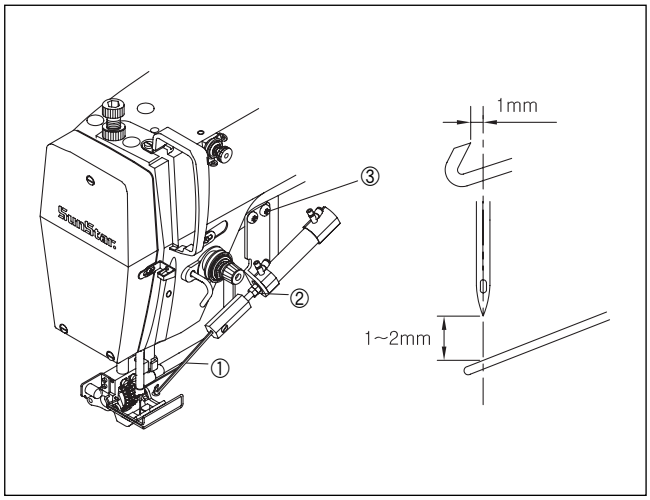
Caution

The stitch length may change depending on fabric type and thickness. Readjust the stitch length after checking the sewing condition.

※ See the program unit operating method for step motor's stitch length adjustment (KM-360J-7E).

6.9) Pneumatic Wiper Adjustment

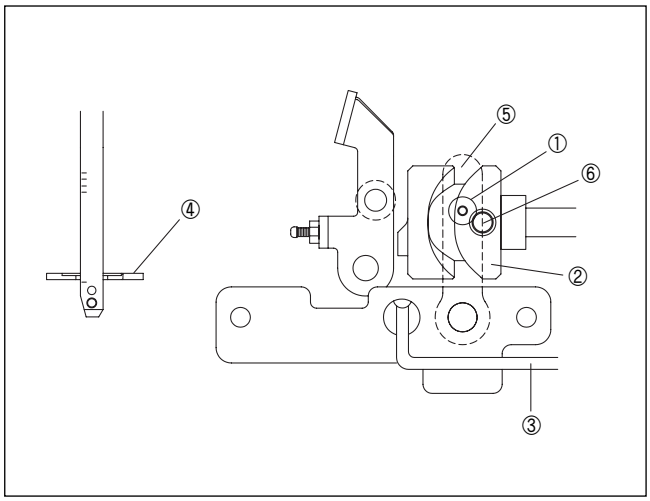
A. Release air pressure.
B. Turn the pulley to place the thread take-up lever at the highest position.
C. Pull the wiper ① and loosen the nut ②. Adjust the wiper position as in the figure and fasten the nut ②.
D. Loosen the nut ③ and set the distance between the needle tip and the wiper at some 1~2mm.
E. Return the wiper ① back to the original place.



[Fig. 30]

6.10) Trimmer Cam Adjustment

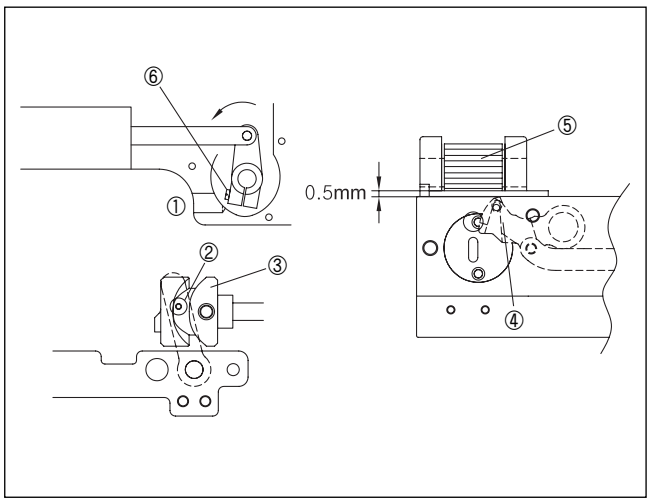
A. Turn the pulley and set the thread take-up lever at the highest position.
B. Press the solenoid lever ③ to make the trimmer cam roller ① inserted into the trimmer cam ②.
C. Turn the pulley to make the needle bar's carved line meet the bottom of the oil reject cover ④. Then adjust the trimmer cam to make the trimmer main lever ⑤ move to the left.
D. Loose the trimmer cam tightening screw ⑥ for adjustment. When adjustment is complete, tightly fasten the screw.



[Fig. 31]

6.11) Blade Position Adjustment

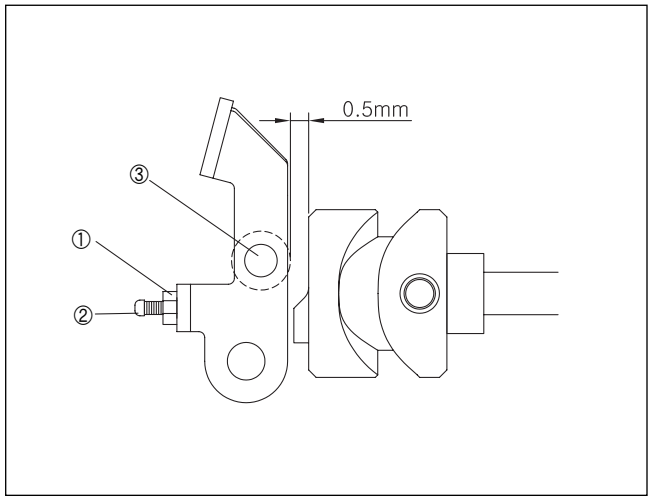
A. Remove the rubber cap ①.
B. Turn the pulley to place the thread take-up lever at the highest position.
C. Push the trimmer cam roller ② into the trimmer cam ③ and turn the pulley until the moving blade ④ can move in full.
D. Loosen the trimmer lever screw ⑥ to set the distance between the moving blade ④ and the roller (down) ⑤ at 0.5mm. When adjustment is complete, fasten the screw.
E. Reassemble the rubber cap ①.



[Fig. 32]

6.12) Thread Take-up Lever Adjustment

A. Loosen the nut ①.
B. Turn the adjusting screw ② to set the distance between the thread release lever roller ③ and the trimmer cam at 0.5mm.
C. Fasten the nut ①.



[Fig. 33]

7

Causes of troubles and troubleshooting

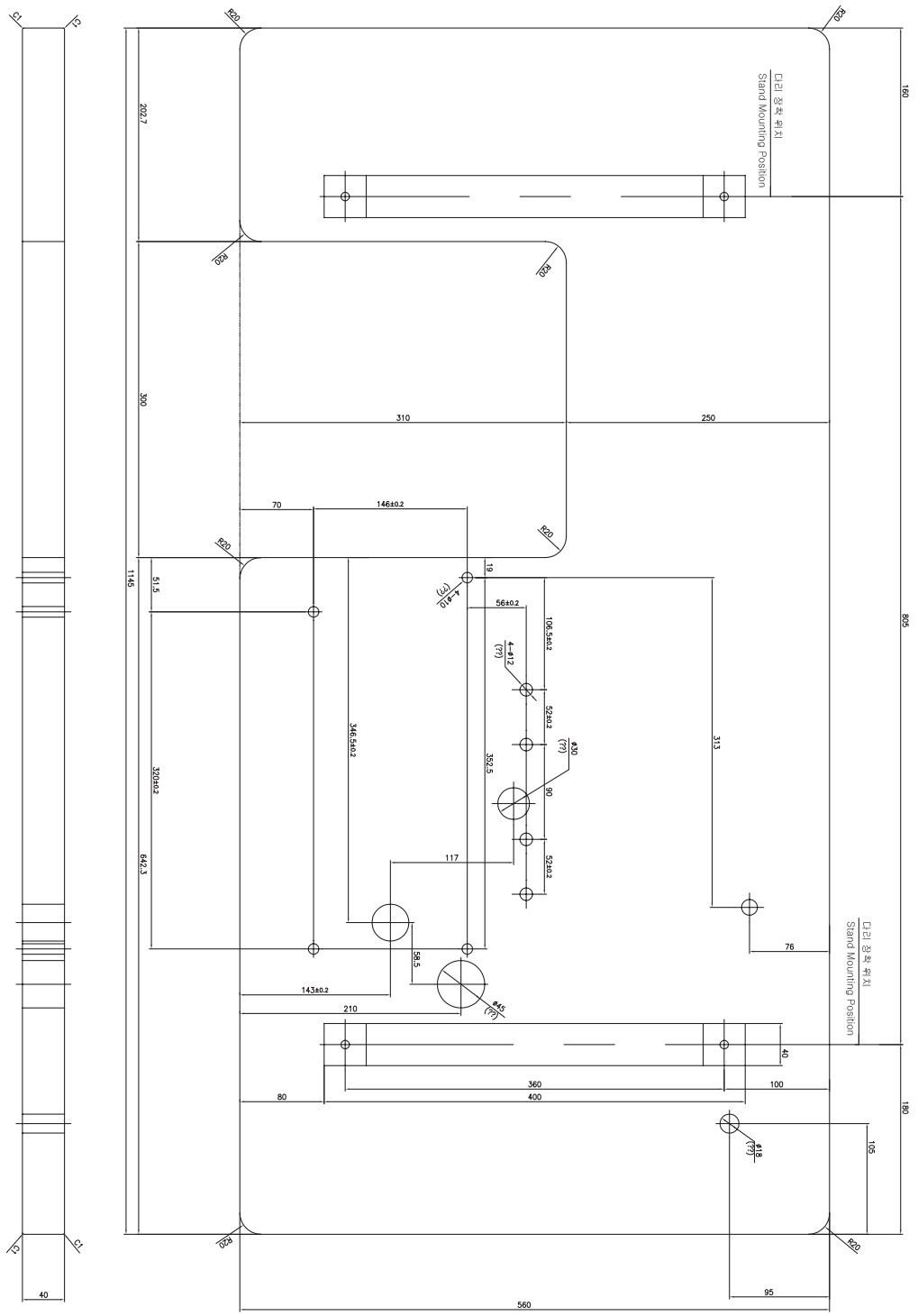
No	Symptom	Checkpoints	Root cause	Corrective action
1	Needle breaks	Direction and height of needle	Needle is inserted into wrong direction.	Reinsert the needle correctly.
		Needle	Needle is bent.	Replace the needle.
			Bad timing of feed dog.	Adjust the timing of feed dog.
		Ascending level of needle bar	Bad timing of needle and hook.	Adjust the timing of needle and hook.
		Height of needle	Bad timing of needle and hook.	Adjust the timing of needle and hook.
		Gap between needle and hook	Bad timing of needle and hook.	Adjust the timing of needle and hook.
2	Thread breaks	Threading method	Wrong threading.	Thread the needle correctly.
		Needle	Bent needle or broken needle tip.	Replace the needle.
		Direction and height of needle	Needle inserted in the wrong position.	Insert the needle correctly.
		Upper thread tension	Too tight upper thread tension.	Reduce tension of upper thread.
		Lower thread tension	Too tight lower thread tension.	Reduce tension of lower thread.
		Working capacity of take-up lever spring	Loose upper thread.	Adjust take-up lever spring.
3	Stitch skips	Direction and height of needle	Needle inserted in the wrong position.	Reinsert the needle in the right direction.
		Needle	Bent needle or broken needle tip.	Replace the needle.
		Threading	Thread passing at wrong position.	Replace the needle.
		Ascending level of needle bar	Wrong timing of needle and hook.	Adjust the timing of needle and hook.
		Height of needle bar	Wrong timing of needle and hook.	Adjust the timing of needle and hook.
		Gap between needle and hook	Wrong timing of needle and hook.	Adjust the timing of needle and hook.
			Remaining length of upper thread is short .	Adjust the thread adjusting device.
		Racing-proof spring of bobbin case	Due to bobbin racing during trimming, lower thread dropping from bobbin case becomes too short to go up.	Replace the racing protection spring.
		Take-up lever spring	Unable to lift lower thread due to weak take-up lever spring.	Adjust the working capacity of take-up lever spring.

No	Symptom	Checkpoints	Root cause	Corrective action
4	Upper thread does not sink.		Too tight upper thread tension.	Reduce tension of upper thread.
			Too loose lower thread tension.	Increase tension of lower thread.
5	Lower thread does not sink.		Too weak upper thread tension.	Increase upper thread tension.
			Too strong lower thread tension.	Decrease tension of lower thread.
6	Trimming errors	Tension of fixed blade	Tension not aligned between movable and fixed blades.	Adjust tension of movable and fixed blade.
		Edge of movable and fixed blades	Abrasion in blade groove of movable and fixed blades.	Replace movable and fixed blades.
		Direction of needle	Wrong needle insertion.	Reinsert the needle correctly.
		Check the crossing of trimmer cam notch mark and blade	Insufficient crossing quantity of movable and fixed blade.	Adjust the strokes of movable and fixed blades.
7	Upper thread is pulled out when sewing commences.		Too strong upper thread tension.	Adjust tension of upper thread.
			Too thick a needle for thread.	Check thickness of needle.
		Check the Up-stop position of needle	Take-up lever pulls out the upper thread because the needle up and down position is too high.	Adjust the up-stop position of needle.

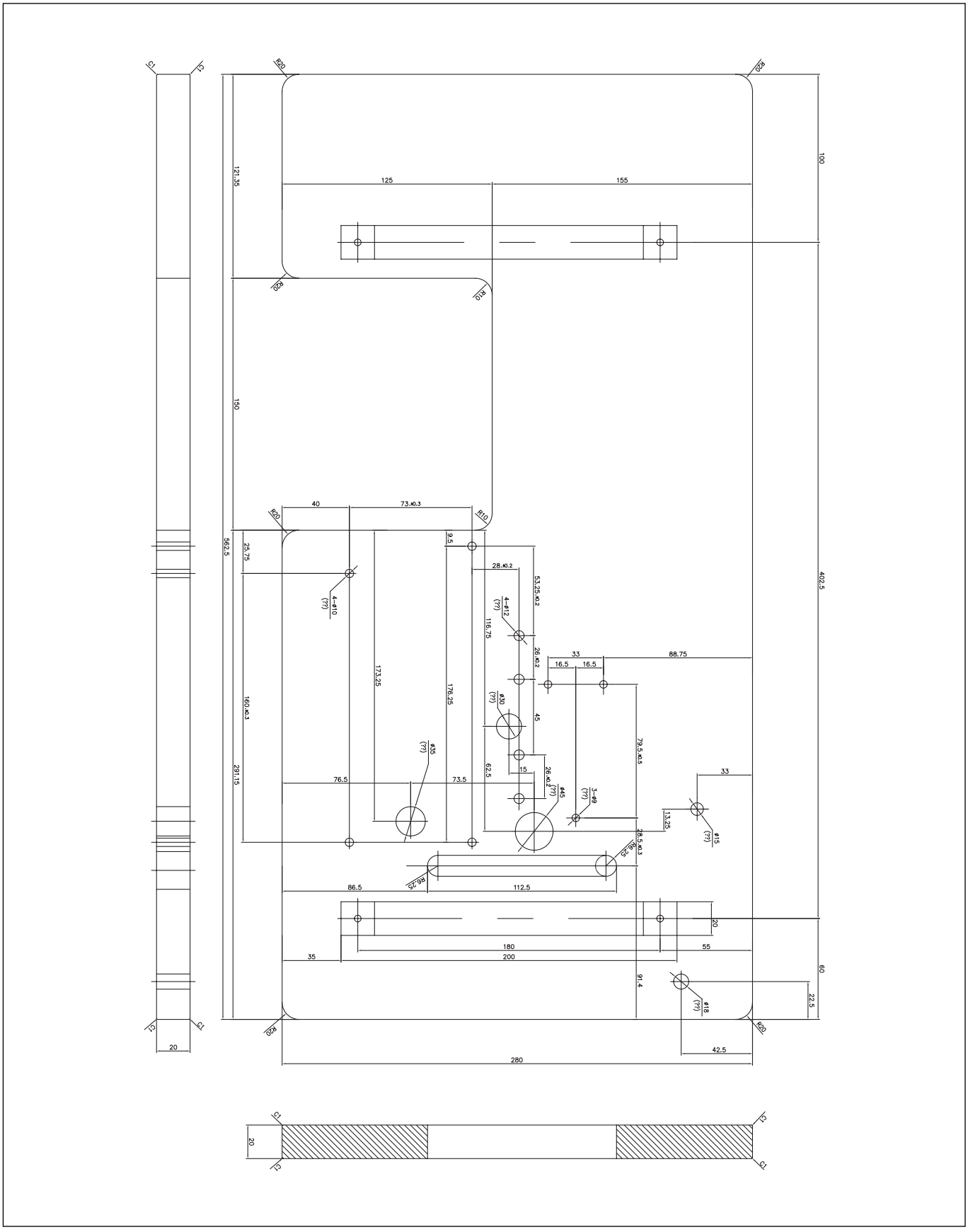
8

Table Drawings

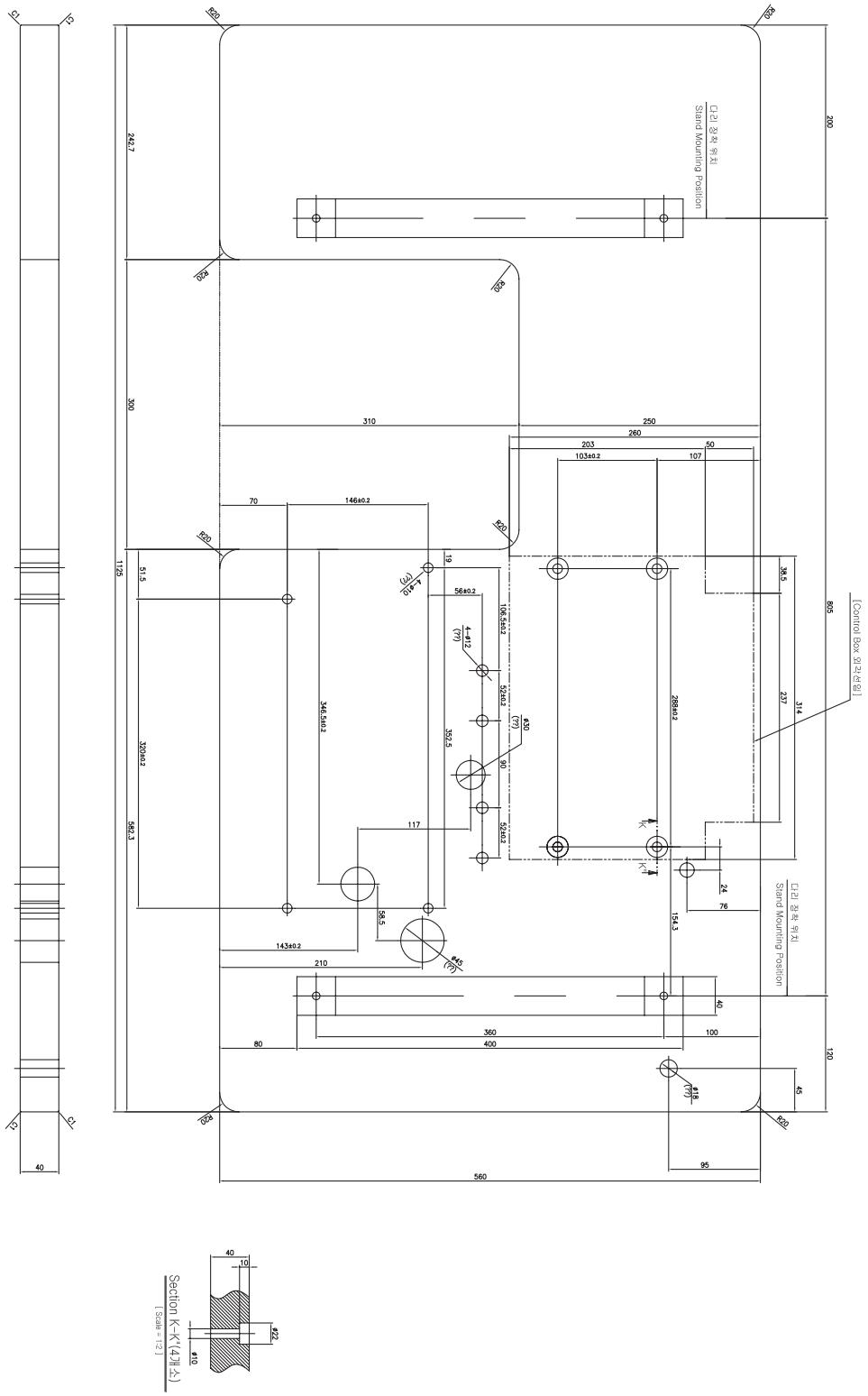
8.1) KM-360J-7M (Type A)



8.2) KM-360J-7M (Type B)



8.3) KM-360J-7M (Type C)



9

Pneumatic Circuit Diagram

9.1) KM-360J-7M(E)